June 15 Meeting Update: CIF and Brier Score

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Update for this week

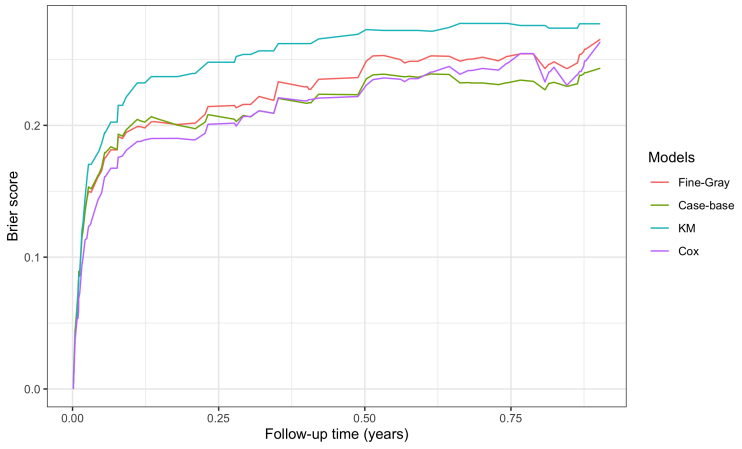
- Worked on testing functions for cause-specific cumulative incidence function and Brier score
- Models under comparison: Case-base, Fine-Gray, Cox Proportional Hazards Model (unpenalized)
- Looking at predictions only for cause 1
- Increased beta value to 0.9

Non-sparse case without regularization (N = 400, p = 10)

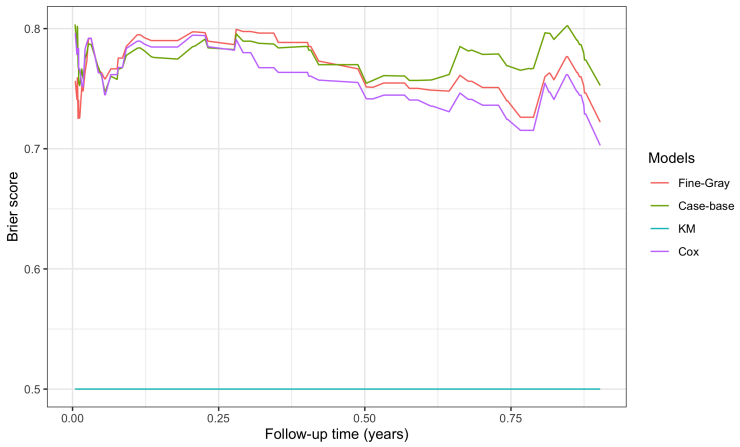
- Cause 1 average incidence rate: 32 %

$\beta = (0.9, 0.9, 0.9, 0.9, 0.9, 0.9, 0.9, 0.9, 0.9, 0.9)$

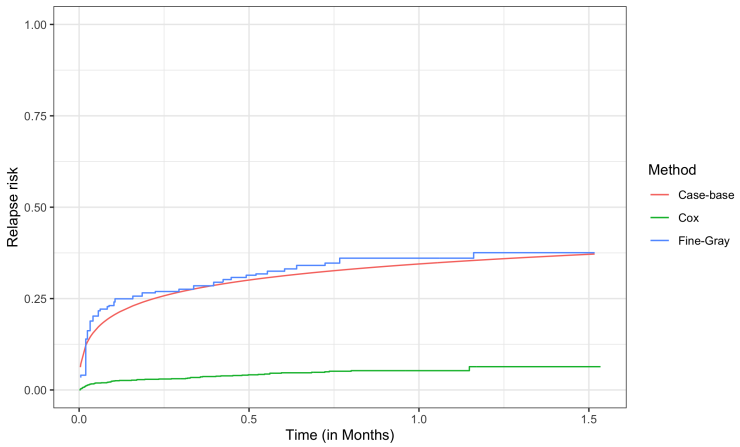
Brier score



Time-dependent AUC



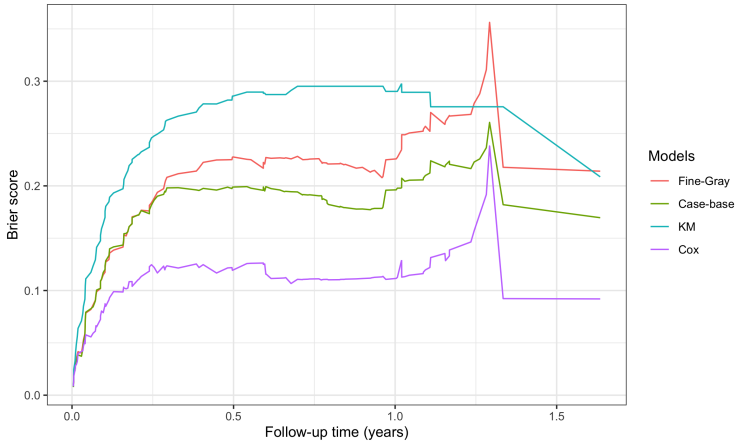
Cause-specific cumulative incidence functions



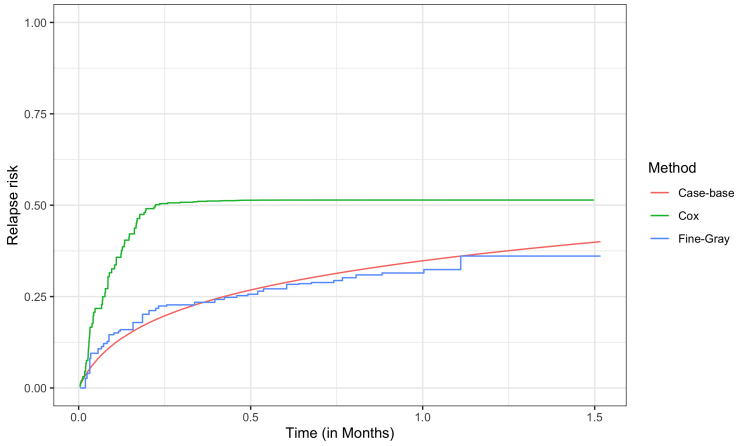
Medium sparsity case without regularization (N = 400, p = 20)

- $\beta = (0.9, 0, 0, 0, 0, 0.9, 0, 0, 0, 0.9, 0, 0, 0, 0, 0.9, 0, 0, 0, 0, 0.9)$
- Number of non-zero elements: 5
- Cause 1 average incidence rate: 42 %

Brier Score



Cause-specific cumulative incidence

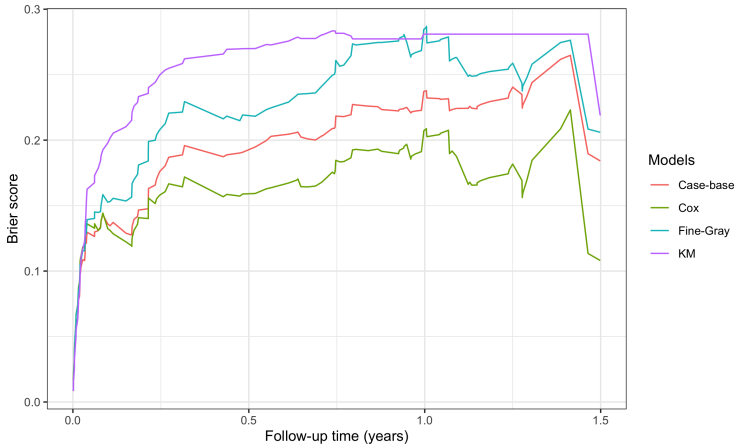


Low sparsity case without regularization (N = 400, p = 10)

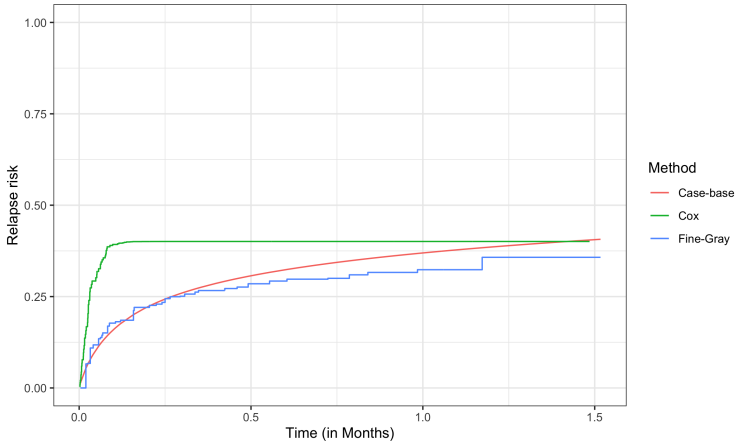
- Cause 1 average incidence rate: 38 %
- Number of non-zero elements: 10

$\beta = (0.9, 0.9, 0.9, 0, 0.9, 0, 0, 0.9, 0, 0.9, 0, 0, 0.9, 0, , 0, 0.9, 0, 0, 0.9)$

Brier score



Cause-specific cumulative incidence functions



Next Steps

- Refactoring p > N simulations: hope to finish by this week
- Brier scores for p > N simulations